KNOWLEDGE PROBE 5: CONTEMPORARY WIRELESS TECHNOLOGY: CELL PHONES, WIRELESS LOCAL AREA NETWORKS, AND SHORT-RANGE RADIO

Short Range Wireless Technologies

Learning Objectives

1. Define short range wireless.
2. Identify applications for Bluetooth, RFID, UWB, and ZigBee.
3. Identify the technology used in the different short range wireless applications.

1. Short range wireless usually refers to data radios that transmit to a range of about
   a. 10 feet
   b. 10 meters
   c. 100 feet
   d. 100 meters

2. When two or more short range transceivers link up, the connection is normally referred to as a
   a. Mesh network
   b. PAN
   c. WAN
   d. WLAN

3. The benefit of a mesh network is that
   a. It can transmit a signal over two or more different paths
   b. It covers a wider range
   c. It is more reliable
   d. All of the above

4. A popular cable replacement wireless system for cell phones and PC peripherals is
   a. 802.11b
   b. Bluetooth
   c. UWB
   d. ZigBee

5. What is the operating frequency range of both Bluetooth and ZigBee?
   a. 902-928 MHz
   b. 2.4 GHz
   c. 5.8 GHz
   d. 3.2 to 10.6 GHz

6. Bluetooth uses
   a. DSSS
   b. FHSS
   c. OFDM
   d. Pulse modulation

7. The network form by Bluetooth devices is called a
   a. Mesh network
   b. Metro network
   c. Piconet
   d. WLAN

8. The maximum data rate of Bluetooth EDR is
   a. 250 kHz
   b. 1 Mbps
   c. 3 Mbps
   d. 11 Mbps

9. The main application for ZigBee is
   a. Hot spots
   b. PC peripherals
   c. Remote controlled models
   d. Telemetry and control

10. The maximum data rate of ZigBee is
    a. 20 kbps
    b. 40 kbps
    c. 62.5 kbps
    d. 250 kbps

11. UWB operates in what frequency range?
    a. 902-928 MHz
    b. 1.6 GHz
    c. 2.4 GHz
    d. 3.2 to 10.6 GHz

12. The main benefit of UWB is
    a. Immunity to noise
    b. Longer transmission range
    c. Very high data rates
    d. Wide bandwidth

13. The main application for UWB will probably be
    a. Computer data
    b. Digital phones
    c. Surround sound
    d. Video transmission

14. A passive RFID tag does NOT require a battery.
    a. True
    b. False

15. The main circuit in an RFID tag is a(n)
    a. Antenna
    b. Coil
    c. EEPROM
    d. Rectifier

16. Which of the following is NOT a common RFID operating frequency?
    a. 125 kHz
    b. 13.56 MHz
    c. 915 MHz
    d. 1.2 GHz

17. RFID will replace all bar codes.
    a. True
    b. False

18. A key application of RFID is
    a. Inventory tracking and control
    b. PAN
    c. Video transmission
    d. WLAN